REMARKS

Claims 64-70 and 72-101 are pending in the application. Claims 64-66, 68-70, 73, 74, 80, 81, 83, 86, 87, 89, 91, 92, 94-97, and 99-101 have been amended.

Support for the amendments to the claims and newly added claims can be found throughout the application, including, but not limited to, portions of the following figures and locations: p. 2, line 18 to p. 3, line 22; p. 5, line 4 to p. 6, line 32; and Figs. 1–3.
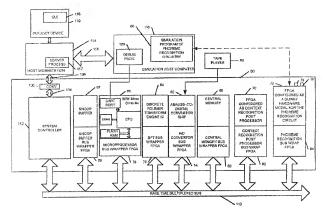
Rejections Under Section 103

All independent claims (64, 73, 81, 87, 92, 97) stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Evans *et al.* (U.S. Pat. No. 6,279,146) in view of Applicant's alleged admitted prior art ("the AAPA") and the Lee reference (Seungjun Lee, A Hardware-Software Co-simulation Environment (1993) (Ph.D. dissertation, University of California at Berkeley)). *See* Office Action at 3. Applicant respectfully disagrees with these rejections, and has also amended the claims to advance prosecution.

Claims 64, 73, and 81

Applicant submits that the proposed combination of Evans, the AAPA, and Lee, even assuming *arguendo* a motivation to combine these references (which Applicant does not concede), fails to teach each and every element of claim 64.

Evans relates to "verifying a multicomponent target system that may rapidly model a significant portion of the target system and may [also] be easily connected to a simulator or software debugging tool." Evans at col. 3, lines 63-67. In order to "illustrat[e] how a target system may be verified," *id.* at col. 6, lines 46-48, Evans teaches a "simulation host computer 118," *see* Evans at col. 8, lines 50-58 and at Fig. 2 (reproduced below). "Simulation host computer 118" runs a software "simulation program of phoneme recognition circuitry." *See id.* The "simulation host computer 118" is connected to a "host workstation 114." *See id.* at Fig. 2 and at col. 7, lines 60-65. "Host workstation 114" is in turn connected to a "verification engine 60." *See id.*

Evans's Figure 2

The Examiner appears to contend that, relative to claim 64, Evans's computer 114 and verification engine 60 teach a "computer system [that] is configured to couple to an emulator, wherein the emulator is configured to emulate an integrated circuit designed to communicate bidirectionally with a peripheral device." *See* Office Action at 3. Accordingly, the Examiner's interpretation would require that Evans's verification engine 60 be "configured to emulate an integrated circuit designed to communicate bidirectionally with [a] peripheral device." *See id.* and claim 64.

However, Evans does not teach or suggest a "peripheral device" in the manner required by claim 64. The Examiner apparently suggests that Evans's "computer 118" teaches such a peripheral device, *see* Office Action at 3, but Applicant disagrees. Instead, Evans teaches that "simulation host computer 118" "execut[es] a simulation program 86." *See* Evans at col. 8, lines 55-58. Simulation program 86 is not a "peripheral device" as recited in claim 64. Simulation program 86 is a "portion" of "a target design system." *See* Evans at col. 8, line 66 to col. 9, line 16 (also noting that verification engine 60 is another portion of the target design system) and at Fig. 2. Further, the Examiner does not identify any specific feature of Evans's computer 118 that would relate to a particular "peripheral device" in the context of an "emulator [that] is configured to

emulate an integrated circuit designed to communicate bidirectionally with the peripheral device" as recited in claim 64. The Examiner cites Evans at col. 8, line 55 to col. 9, line 3, *see* Office Action at 3, but at this location, Evans never explicitly refers to a "peripheral device." Instead, Evans simply appears to describe various operations relating to "verification engine 60," "workstation 114," and "computer 118." *See* Evans at col. 8, line 55 to col. 9, line 3. And indeed, the only explicit mention of a "peripheral" in Evans is a "standard Peripheral Connections Interface (PCI) bus 138" that merely connects the verification engine 60 (*not* computer 118) to host workstation 114. *See* Evans at col. 8, lines 43-47 and at Fig. 2.

To the extent that the Examiner suggests that Evans's computer 118 is *itself* the "peripheral device" of claim 64, Applicant again disagrees. Evans's verification engine 60 is not "configured to emulate an integrated circuit designed to communicate bidirectionally with" Evans's computer 118 (as would be required by the Examiner's theory). Instead, Evans teaches that verification engine 60 relates to, for example, "a fictitious voice recognition target system." *See* Evans at col. 6, lines 45-52 and at col. 6, lines 60-67.

Applicant submits that for at least the reasons above, Evans does not teach or suggest, as recited by claim 64, a "computer system [that] is <u>configured to couple to an emulator and a peripheral device, wherein the emulator is configured to emulate an integrated circuit designed to communicate bidirectionally with the peripheral device</u>" (emphasis added). Evans's "simulation program 86" that "simulat[es]" "a portion" of a "target system" being tested does not teach or suggest these elements, *see, e.g.,* Evans at col. 8, line 66 to col. 9, line 16, nor does any portion of that reference. Applicant further submits that no other cited art teaches or suggests these claim elements (which the Examiner does not assert).

Claim 64 includes additional elements that are also not taught or suggested by the cited references. Specifically, Evans fails to teach or suggest "receiv[ing] one or more digital data packets at a first transmission rate from the peripheral device" and "send[ing] data contained in the received digital data packets to the emulator at a second transmission rate," "wherein the second transmission rate is slower than the first transmission rate."

The Examiner concedes that Evans fails to teach or suggest a "computer system" "receiving data from the peripheral device at a first transmission rate and sending data to the emulator at a second transmission rate which is slower than the first transmission rate." *See* Office Action at 3-4. As noted in the last response, however, Evans teaches that "simulation program 86 communicates

with the verification engine [60] implementation of the rest of the target system 10 by way of a dummy hardware module 72." *See* Evans at col. 9, lines 17-59 and at lines 63-67 (emphasis added). In this context, Evans notes that "although the time necessary to make [certain] updates does slow system operation, it is a fairly small time demand compared with **the much longer time necessary for simulation program 86 to execute and to send data to and receive data from the host work station 114**." *See* Evans at col. 9, lines 17-59 and at lines 63-67 (emphasis added).

To compensate for Evan's admitted deficiencies, the Examiner suggests that the AAPA would be usable to modify Evans so "that a peripheral device [would] transmit data at a first transmission rate <u>faster</u> than the second transmission rate." Office Action at 4 (emphasis added). Applicant disagrees, and submits that such a modification would not be made by one of skill in the art in view of the abovementioned "much longer time necessary for simulation program 86 to execute and to send data to and receive data from the host work station 114." *See* Evans at col. 9, lines 17-59 and at lines 63-67. Thus, the AAPA does not overcome the shortcomings of Evans.

The other cited references fail to remedy Evans's deficiencies. For example, the Lee reference is cited for the proposition that "buffers can be placed in between [two electronic entities] to store received data at one rate and then transmit to [a] destination at another transmission rate." *See* Office Action at 4. Even assuming *arguendo*, however, that Lee makes such a teaching (which Applicant does not concede), Lee does not teach or suggest the above-discussed elements of claim 64 (nor does the Examiner make this assertion).

Applicant submits that for at least the reasons above, the proposed combination of Evans, the AAPA, and the Lee reference does not teach or suggest each and every element of claim 64. Applicant submits that the proposed combination therefore cannot make a *prima facie* case of obviousness against that claim. Applicant respectfully requests withdrawal of the § 103 rejections of claim 64 and its dependent claims. Additionally, although claims 73 and 81 differ in scope from claim 64, Applicant requests withdrawal of the § 103 rejections of claim 73, claim 81, and their respective dependent claims for at least similar reasons to those argued above.

Dependent Claims 65, 80, and 83

Dependent claim 65 is further patentably distinct over the cited art. Claim 65 recites that "the peripheral device is a network interface device," that "the emulator is configured to emulate an integrated circuit designed to communicate bidirectionally with the network interface device according to one or more network communication protocols," and that "the network interface device is configured to communicate according to the one or more network communication protocols." In contrast to claim 65, however, Evans merely teaches, e.g., an "illustrati[on] [of] how a target system may be verified" using a "a fictitious voice recognition target system." *See* Evans at col. 6, lines 45-48. Evans mentions a "network" only twice in passing, *see id.* at col. 8, line 56 and at col. 10, line 13, and does not teach or suggest an "emulator [that] is configured to emulate an integrated circuit designed to communicate bidirectionally with [a] network interface device according to one or more network communication protocols" as recited by claim 65, for example.

Applicant submits that the other cited art also fails to teach or suggest the elements of claim 65, and thus that claim is further patentably distinct over the art. Although claims 80 and 83 differ in scope from claim 65, Applicant submits those claims are also further patentably distinct over the cited art for at least similar reasons.

Claims 87, 92, and 97

For at least reasons related to those argued above with respect to claim 64, Applicant respectfully submits that the proposed combination of Evans, the AAPA, and the Lee reference (again assuming *arguendo* a motivation to combine these references exists, which Applicant does not concede) fails to teach each and every element of claim 87.

Evans fails to teach or suggest "receiving digital data ... at a first transmission rate from a circuit emulator via a first peripheral interface," "wherein the circuit emulator is configured to emulate an integrated circuit that is designed to communicate bidirectionally with a peripheral device," and "transmitting the retrieved data to the peripheral device at a second transmission rate over a second peripheral interface coupled to the computer, wherein the first transmission rate is slower than the second transmission rate" as recited by claim 87 (emphasis added). As discussed above with respect to claim 64, Evans's computer 118 does not teach or suggest a "peripheral interface" for which an "emulator is configured to emulate an integrated circuit designed to communicate bidirectionally with." *See infra.* at 12–14. Further, Evans and the AAPA also fail to teach or suggest, as recited by claim 87, "transmitting ... at a second transmission

rate, ... wherein [a] first transmission rate is slower than the second transmission rate" for at reasons similar to the ones that Evans fails to teach or suggest other "transmission rate" related elements of claim 64. *See infra.* at 15. Applicant submits that the Lee reference and other cited art fails to remedy these defects (and respectfully notes that the Examiner makes no such assertions).

Applicant respectfully requests withdrawal of the § 103 rejections of claim 87and its dependent claims for at least the reasons above. Additionally, although claims 92 and 97 differ in scope from claim 87, Applicant requests withdrawal of the § 103 rejections of claim 92, claim 97, and their respective dependent claims for at least similar reasons to those argued above.

Dependent Claims 89, 96, and 101

Dependent claim 89 recites that "the peripheral device is a network interface device," and that "the integrated circuit is designed to communicate bidirectionally with the network interface device using one or more network protocols that the network interface device is also configured to use." Accordingly, claim 89 is further distinct over the cited art for at least reasons similar to those discussed with respect to claim 65. *See infra.* at 16. Claims 96 and 101 are also further patentably distinct over the cited art for at least similar reasons.

CONCLUSION

Applicant respectfully submits the application is in condition for allowance, and an early notice to that effect is requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above-referenced application from becoming abandoned, Applicant hereby petitions for such extension.

Although no fees are believed due as a result of the present submission, the Commissioner is authorized to charge any fees that may be required, or credit any overpayment, to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 501505/6257-16302/AAC.

Respectfully submitted,

Date: <u>June 24, 2011</u>   By: <u>/Alex A. Courtade/</u>
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